



FINAL YEAR PROJECT REPORT

MONITERING AND CONTROLLING THROUGH GSM SCADA BASED SYSTEM

**In fulfillment of the requirement
For degree of
BEE (Electronics)**

By

**ABDUL REHMAN 25332 BEE (ELECTRONICS)
BASHARAT HAFEEZ SIDDIQUI 25347BEE (ELECTRONICS)**

SUPERVISED

BY

ENGR. BURHAN AHMED

**BAHRIA UNIVERSITY (KARACHI CAMPUS)
2011-2015**

ACKNOWLEDGEMENT:

We would like to thank everyone who had contributed to the successful completion of this project.

We would like to express my gratitude to my research supervisor, Sir Burhan Ahmad for his invaluable advice, guidance and his/her enormous patience throughout the development of the research.

In addition, we would also like to express my gratitude to our loving parent and friend Mr.zeeshan latif ,who had helped and given me encouragement.

CONTROLLING AND MOINTERING THROUGH USING GSM

ABSTRACT:

Microcontroller based SCADA System Using GSM is used of monitoring and controlling the industrial processes and controlling of the electronic devices at any remote area from base station using HMI. This project is a wonderful & most reliable solution for the widely scattered SCADA. Monitoring is required in many industries and applications such as oil and gas, power related, water treatment plant, and environmental monitoring. In these applications, a fairly large number of RTUs in remote and hazardous locations which collects data from devices and send data and alarms to a SCADA terminal in a central control room (CCR). As the IT network infrastructure improves in remote areas, commodity network infrastructure can be more readily used in telemetry applications, reducing initial startup costs and affording relatively stable communications, previously SCADA is made by PLC'S which make high cost of transplantation as use of microcontroller is smart less spaced efficient and reliable way of communication through remote area it decreases the initial cost of plantation and reduces the repairing and service cost.

Since this technology has not been available to the public on large scale in Pakistan therefore we are committed to manufacture this project in reasonable price on large scale so that Industries and companies like SSGC, KESC of Pakistan can benefit from our product. We believe that our project has the potential to conquer large market.

CHAPTERS:

1	INTRODUCTION	120
1.1	Background.....	10
1.2	Problem	
	Statements.....	120
1.3	Aims and Objectives.....	10
1	INTRODUCTION	120
1.1	Background.....	10
1.2	Problem	
	Statements.....	120
1.3	Aims and Objectives.....	10
1.4	Scope of Project.....	11
2	LITERATURE REVIEW	12
2.1	GSM Module.....	12
	2.1.1 Roming Services.....	13
	2.1.2 SIM 900.....	14
	2.1.3 Figureof GSM.....	14
2.2	RF	
	Module.....	1Error!
	Bookmark not defined.	
	2.2.1 TX Module	14
	2.2.2 RX Module.....	15

2.2.3	Figure of RF pin out.....	1
2.2.4	Error! Bookmark not defined.	
2.2.4	Figure of RF modules.....	16
2.3	Pic Microcontroller.....	17
2.3.1	Pic 16F688.....	19
2.3.2	Figure 16F88.....	20
2.3.3	Data sheet.....	21
2.3.4	PIC 18F452.....	22
2.3.5	Figure 18F452.....	23
2.3.6	Data sheet.....	24
2.3.7	PIC 18F452 pin discription.....	25
2.4	LM35 Temprature Sensor.....	25
2.4.1	Figure.....	25
2.4.2	Advantages.....	26
2.4.3	Diagram.....	26
2.4.4	Working.....	27
2.4.4	Data sheet.....	28
2.5	PIR(Passive Infrared) Sensor.....	29
2.5.1	Figure.....	29
2.5.2	Working.....	30
2.5.3	Diagram.....	30
2.5.4	Data sheet.....	31
2.5.5	Applications.....	32

2.6	ULTRASONIC SSENSOR.....	32
	2.6.1 Figure.....	33
	2.6.2 Working.....	34
	2.6.3 Applications.....	35
3	DESIGN AND METHODOLOGY	36
3.1	Block diagram of project.....	36
3.2	Explanation of block diagram.....	37
3.3	Transmter ciruit.....	38
	3.3.1 circuit and its explanation.....	38
3.4	Receiver ciruit.....	39
	3.4.1 circuit and its explanation.....	40
4	IMPLMENTATION	41
4.1	Making of TX schematic on proteus.....	41
	4.1.1 Making of TX PCB on proteus.....	42
4.2	Making of RX schematic on proteus.....	43
	4.2.1 Making of RX PCB on proteus.....	44
4.3	CodingandTestingPart	45
	4.3.1 Codes for transmitter.....	46
	4.3.2 Codesforreceiver.....	47
.4	HMI on Lab View.....	49
	4.4.1 Block diagram.....	50
	4.4.2 Front panel.....	50

5	RESULTS AND DISCUSSIONS	50
5.1	HMI Receives Data successfully.....	50
	Figure	51
5.1.2	Data in form of massage.....	51
4.1.1	Expenditure of time of different part of project.....	52
	5.3.1.1 Timeline of Project.....	52
6	CONCLUSION AND RECOMMENDATIONS	53
6.1	Problems while sending data through RF.....	53
6.2	Conclusion.....	53